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Talking up Social Capital: An Analysis of Social Voice

John Hudson

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# Talking up Social Capital: An Analysis of Social Voice

John Hudson

## ABSTRACT

Social capital represents the potential networks open to an individual. But potential does not mean that it is exploited. Social voice is defined as the ability of an individual to make use of their social capital. We analyze a particular aspect of ‘social voice’, i.e. the ability to persuade others. Using a Bayesian framework we conclude that this should increase with education and the frequency with which the social network considers new ideas or issues. The impact of age is ambiguous. An individual’s knowledge should increase, but so too should the strength of prior beliefs within their social network. Empirical work based on Eurobarometer data confirms the importance of education and that social voice declines with age. It also finds evidence for a gender gap, which education only partially corrects, but marriage magnifies. Finally we confirm that social voice impacts on individual wellbeing.

Professor John Hudson, Department of Economics & International Development, Claverton Down, Bath, BA2 7AY, United Kingdom.

Email: [J.R.Hudson@bath.ac.uk](mailto:J.R.Hudson@bath.ac.uk),

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# Talking up Social Capital: An Analysis of Social Voice

## 1. Introduction

Social capital has been connected with those features of social organization, such as trust, norms, and networks that can improve the efficiency of society by facilitating coordinated actions (Putnam, Leonardi and Nanetti, 1993). Putnam (2000) later made this more specific by defining social capital as referring to connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them. Others have built upon this and also come up with their own definitions and Bowles and Gintis (2002) define social capital as referring to trust, concern for one's associates, a willingness to live by the norms of one's community and to punish those who do not. Dasgupta (2008) argues that it is best to define social capital as interpersonal networks. Related to social capital is the literature on interpersonal networks. These are systems of communication channels linking people to one another. They include the family and friends, networks at work and formal organizational networks such as that provided by religion or voluntary groups. A feature which has emerged from this is the preference for similarity in social relations (Blau, 1977). Friendships tend to be similar with respect to socioeconomic status, gender and race (Cohen, 1977; McPherson, Smith-Lovin and Brashears, 2006).

There is considerable evidence that social capital impacts upon people's wellbeing. For example research has discovered a significant relationship from being a member of voluntary associations and wellbeing (Argyle, 1987; Helliwell, 2003). Evidence from the United States and Britain reviewed by Blanchflower and Oswald (2000) also supported the view that social connectedness may be more important for happiness than education and income - at least for average to above-average levels of income. Myers (1999) found similar results for the United States on the impact of close personal relations and social connections on subjective reporting of quality of life.

Thus in many respects social capital matters. But the literature has focused primarily on access to social capital rather than usage. Implicitly access to social capital is assumed to equate to usage, whereas in fact they are two different concepts. According to Sobel (2002) social capital describes circumstances in which individuals can use membership in groups and networks to secure benefits. This in part depends upon membership of such groups, but the

value of social capital to the individual also depends upon the extent to which they can make use of it, i.e. their 'voice'. In many circumstances it depends upon the individual's ability to persuade others of their views, or of their ability to utilize the network to obtain help or favors at need. This affects all aspects of economic life which involve human interaction: at the workplace, in business, within the family and within ordinary every day social interaction. For example when a group, of perhaps just two, is deciding whether to go to a Chinese restaurant or an Italian one, lack of voice may mean the individual's input into the group's decision could be limited. Alternatively, the individual may have potential access to a network which could help with, e.g. a technical problem linked to IT, but lack of social voice may mean such help is not as great as others in the network receive. In many respects voice will determine the individual's share of any social capital dividend, e.g. linked to jobs or scarce resources. Yet, despite its potential importance with respect to not only social capital, but also other areas of economics, it is an aspect of behavior which has received little or no attention within the economics' literature, nor indeed that of other social science disciplines.

In this paper we will address this issue by examining a specific aspect of social voice, i.e. the ability of people to persuade others of their views. There are at least two aspects to this, firstly the willingness of others in the individual's network to be persuaded and secondly the ability of the individual to persuade. Thus in a network characterized by strongly held views, even the most persuasive voice will have little impact. This apart, the ability to persuade others can be divided into characteristics inherent to the individual and a form of discrimination whereby the views of the individual are to an extent discounted by others in the network for reasons not linked to ability. The paper proceeds as follows. In the next section we will present a review of the literature on social capital and related areas particularly as it relates to voice. The empirical work will be based on Eurobarometer data and this is described in the following section after which we present the results obtained using probit regression. We then present results relating to the impact of social voice on individual wellbeing and people's confidence in the future. Finally we conclude the paper.

## **2. The Literature on the Determinants of Social Capital and Social Voice**

The literature with which we are most concerned with relates to the determinants of social capital. One of the problems in researching social capital is that, inevitably perhaps, it has

been defined in several different ways<sup>1</sup>. However, regardless of which definition is used, most work finds education to be a significant factor in impacting upon individual social capital. For example, there is a positive association even at a cross-country level between social and civic engagement and trust on the one hand, and levels of education on the other (OECD, 2001). According to Glaeser (2001), the raw correlation of years of education with membership in organizations is 34 percent in the General Social Survey of the USA. There is also an extremely strong connection between education and social trust (Nie, *et al.*, 1996)

Work on social capital has focused on the strength of ties, questions of trust, and the mix of types of people one is connected to (Lin, 2002). Networks are important in impacting on opinion formation as well as providing opportunities for influence and help. Groups tend to have common beliefs which evolve in terms of their coherence, polarization and dynamics (Moody and Morris, 2008). There have been a number of studies of diffusion over networks which have focused on issues such as the spread of information, norms (Coleman, Katz and Menzel, 1966), and knowledge transfer between firms (Pittaway *et al.*, 2004). The characteristics of this process including its speed and pervasiveness are a function of the characteristics of the network: the density, length and number of paths, clustering and relationship timing (Pool and Kochen, 1978; Watts and Strogatz, 1998; Moody, 2000). Of particular interest is how new or ‘unpopular ideas’ are diffused (Centola, Willer and Macy, 2005). Within this context, people from multiple networks are of particular value, as they extend the potential network beyond its immediate members and thus make it more open to new ideas. An important dimension in social interaction is the spatial one. The literature suggests that there are substantial differences between people living in big cities and other areas. The former tend to have fewer close friends and lower levels of trust (Glaeser 2000). However, Glaeser also notes a relative lack of research by economists in particular into the potential linkage between space and social capital and that little is known of the way the linkage between social capital and urban density and size operates. This is an area Glaeser calls for more analysis. It is a call we in part answer in this paper.

There has been relatively little empirical research on voice *per se*, but there is a literature which has relevance for voice. The influence people have on others depends on how information is interpreted. Of particular relevance for this paper is a psychological literature.

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<sup>1</sup> This survey has drawn heavily on Dasgupta (2008) and Moody and Morris (2008).

The heuristic-systematic model distinguishes between systematic (more) and heuristic (less) cognitive efforts as recipients interpret information. Ziegler et al (2004) argue that information regarding the expertise of the information source may function as a heuristic signal. Similarly Eagly and Chaiken (1993) argue that when the recipient does not examine the arguments too deeply, source characteristics such as expertise or likability may also affect the weight the recipient gives to this information. Hence, expertise, or perceived expertise, may play a key role in the success of individuals in persuading others of their views, but so do other potential characteristics not linked to expertise. This will form the basis of our analysis where we will in part focus on signals of perceived ability. Also of relevance is the literature which evaluates how information from different sources is optimally combined (Winkler, 1981).

Moving away from expertise and focusing on other characteristics, there is a literature which suggests that women tend to talk in a more tentative, exploratory or conciliatory manner than men who are more positive and confrontational (Hickerson and Gastil, 2008). This view is supported by Gilligan (1982) who presents evidence that women are more prone to listen than are men. This suggests that women may have less success in persuading people than men of similar expertise, because of their attitudes and behavior, rather than male discrimination. In any case this approach suggests that women will be less likely than men to be able to persuade others of their views.

### **3. Social Voice: A Bayesian Perspective.**

Social voice can be defined as the ability of an individual to make use of his/her social capital. It takes as given the extent of that social capital. Hence an individual's ability to gain from social capital depends upon both the extent of that social capital *and their social voice*. In this section we will examine social voice within a particular and specific context, i.e. the ability to persuade others using a Bayesian perspective.

We take a representative decision maker, individual  $i$ , who proxies all the people in the  $j$ 'th individual's network. Alternatively this 'person' can be viewed as a close relative to the Walrasian auctioneer who decides the equilibrium price. The decision maker has prior beliefs and modifies those beliefs in light of the information and arguments provided by individual  $j$ . If the decision maker has considerable confidence in their own prior beliefs, then those

beliefs are unlikely to significantly change. This will also be the case if the individual has relatively little confidence in or respect for the j'th person's views. In the regression analysis which follows the confidence the j'th person engenders will be modeled by their socio-economic characteristics.

We will assume that individuals genuinely hold the views that they are presenting to others. Equation (1) defines a basic Bayesian adjustment function with respect to the i'th individual's response to new information provided by the j'th individual on a "representative issue". The i'th individual, who is assigned the role of decision maker, is representative of the set of people j moves in, i.e. his/her social network<sup>2</sup>. We assume i's prior beliefs on this issue  $q_i \sim G(\mu_i, \sigma_i^2)$  where  $\sigma_i^2$  is inversely proportional to the degree of certainty with which the prior belief,  $\mu_i$ , is held and G is some distribution function, e.g. the normal. The i'th person's evaluation of j's opinions,  $r_j \sim H(\mu_{ij}, \sigma_{ij}^2)$  and H is again some distribution function.  $\mu_{ij}$  represents the position i holds and is trying to persuade the group to accept.  $\sigma_{ij}^2$  represents j's credibility within the group, if this equals zero his/her view is accepted without question. Using Bayesian analysis, the posterior beliefs of the i'th person, i.e. the decision maker, are then given by:

$$m_i = \sigma_{ij}^2 \mu_i / (\sigma_{ij}^2 + \sigma_i^2) + \sigma_i^2 \mu_{ij} / (\sigma_{ij}^2 + \sigma_i^2) \quad (1)$$

In the case of equation (1) the impact upon the decision maker's views can be represented by the proportionate change in the prior:  $(m_i - \mu_i) / \mu_i$ . The critical factors are (i) the strength of the prior which is inversely related to  $\sigma_i^2$ , and the value the decision maker puts on the j'th persons views, which is inversely related to  $\sigma_{ij}^2$ . As already said if  $\sigma_{ij}^2 = 0$  then, provided the prior is not held with similar certainty, j's views are unequivocally accepted. However as  $\sigma_{ij}^2 \rightarrow \infty$  then so j's views are increasingly discounted.  $\sigma_{ij}^2$  will depend upon both the individual's characteristics and abilities, the extent to which these are known by the decision maker and any biases which impact upon the decision maker's perception of the individual.

Education is an obvious potential indicator of an individual's ability to persuade others. But so too may be age simply because people learn from experience and also accumulate

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<sup>2</sup> We refer to this as j's 'representative set'. The use of a single decision maker relates to both situations where one individual takes the decision and, for simplicity, group decisions with no formal leader, but where a decision 'emerges'.



knowledge acquired from previous events and debates<sup>3</sup>. Education may also be used as an ability signal by the decision maker in the absence of any further information<sup>4</sup>. General, rather than person specific, biases may relate to both gender, as suggested by the previous literature, and race<sup>5</sup>.

The strength of the prior will tend to increase with the length of time the decision maker has been considering the issue. Considerations upon a new issue will be approached with some degree of uncertainty, and  $\sigma_i^2$  will be relatively large. Considerable weight is then likely to be placed on other views. New issues are more likely to arise in large towns which change more rapidly than small rural areas<sup>6</sup> and where there is a greater diversity of interconnected networks, with the possibility of the views of one networking impacting on the views of another (Moody and Morris, 2008). Hence we would expect people to experience relatively smaller success in persuading others in rural areas than in densely populated ones. In addition, the older is the decision maker, individual  $i$ , the stronger are his/her prior beliefs likely to be, through the accumulation of past information. Put another way, young people are more likely to change their views and be influenced by others than older people, simply because their views are in the formative stage. In the empirical work, we do not have direct information on the average age of  $j$ 's social network, but indirectly we might infer this from  $j$ 's age itself, as to a considerable extent people's social networks, apart from family ones, tend to be homogenous with respect to age and indeed other characteristics (Blau, 1977, Cohen, 1977 and Mcpherson, Smith-Lovin and Brashears, 2006)

In the more general case the  $i$ 'th individual may need to compete with the opinions of  $n$  others, in which case the decision maker's decision is given by<sup>7</sup>:

$$m_i = W\mu_i / (W + \sigma_i^2) + \{\sigma_i^2 / (W + \sigma_i^2)\} (e'\Sigma^{-1}\mu) / (e'\Sigma^{-1}e) \quad (2)$$

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<sup>3</sup> Hence in some societies the elders are a particularly important part of the decision making process (Crate, 2002). This is most likely to be the case when the state of the world changes slowly as then their accumulated experience is of most value, whereas in a rapidly changing world their experience may be of less value.

<sup>4</sup> This is similar to the argument by Eagly and Chaiken (1993).

<sup>5</sup> Race is most likely to be relevant in multi-ethnic social networks.

<sup>6</sup> Going back to the restaurant analogy, they open more frequently in a large town than in a rural area.

<sup>7</sup> For a derivation of this see Hudson (2000).

where  $\mathbf{e}$  is the unit vector,  $\Sigma = E(\sigma \sigma')$ ,  $\sigma = \{\sigma_{i1}^2, \sigma_{i2}^2, \dots, \sigma_{in}^2\}$   $\mu = \{\mu_{i1}, \mu_{i2}, \dots, \mu_{in}\}$  and  $W = (\mathbf{e}'\Sigma^{-1}\mathbf{e})^{-1}$

This is similar to (1) in that the decision maker revises his/her prior views in line with the collective views of others.  $W$  represents the overall confidence the decision maker places on others views. The more people in the network the greater will be their collective influence and the smaller will be  $W$ . This is a reflection of the saying “two heads are better than one”. Adding extra people’s views is extra information and extra information should increase the quality of the decision (see Winkler, 1981, Hudson, 2000). However, the greater the number of people in the network the smaller is the likely influence of any one individual. This is a reflection of a general rule that an individual’s voice is most effective in small forums. The individual’s impact upon the decision maker's views can now be represented by the proportionate impact the individual has compared to the view that would have been reached without his or her participation. Hence in this case,  $j$ ’s influence now depends upon their perceived ability compared to others in the network. Once more this perception will itself evolve in a Bayesian manner and depend upon similar socio-economic characteristics as before.

Hence we assume that social voice will depend upon socio-economic characteristics such as age, gender and education We expect social voice to increase with education. The impact of age is ambiguous in that as people age so they become more knowledgeable, but so in general does their ‘representative set’. The literature also suggests that there will be a gender gap which sees women at a disadvantage. Location is also likely to have a significant impact upon social voice as rural communities are likely to be more closed and homogeneous where views are held with greater strength and certainty. There may also be country based or cultural differences in social voice, the discussion of which we defer till later.

#### 4. The Data

We will be using data from the Eurobarometer surveys carried out in February/March 2006, October/November 2005 and November/December 2004 of the 25 EU member countries as defined at those times. The survey covers the population of the respective nationalities of the European Union member states aged fifteen years and over in each of the member states. The surveys are carried out by TNS Opinion and Social Consortium. on the request of the

European Commission. The basic sample design is a multi stage, random probability one. The surveys are designed to be representative in terms of the distribution of the resident population of the respective EU nationalities in terms of metropolitan, urban and rural areas. All interviews were face to face, in people's homes and in the appropriate national language. In most countries approximately 1000 people are interviewed. All the variables, including the socio-economic ones, are defined in an appendix. The regression analysis excludes don't knows and those who otherwise did not answer the question. The dependent variable relates to self-perceived ability to persuade others. Being as the data is discrete and ordered, ordered probit was used. With respect to the independent variables, in addition to individual age, education, gender and location, we initially include GDP per capita in the respondent's country, as well as regressions with country fixed effects.

Insert Table 1 about here

Summary data with respect to the dependent variable are given in Table 1. This represents the proportion who felt they had limited social voice, i.e. the proportion responding rarely or never to the question as defined in the appendix. In 2004 and 2005 slightly in excess of half of those sampled felt they had such limited ability. There are wide differences across individual characteristics. Social voice steadily declines with age and is substantially higher for men than women. There are even bigger differences relating to education and social voice clearly increases with the level of education and increases substantially. Nonetheless, almost 44% of those with the highest level of education still felt they had little success in persuading others. There are also differences relating to location where social voice increases with settlement size, i.e. it is lowest for villages and rural areas and highest for large towns and cities.

Figure 1 shows the differences between countries and again there are substantial differences. In most countries there is a fairly even split between those who feel they have a strong social voice and those who feel they do not. The weakest social voice lies in Finland and Spain. The strongest is, by some margin, in the Netherlands followed by Greece. The figures for 2006 follow the same general trends across individual characteristics, but shows a consistently stronger social voice. The reason for this may be linked to the format of the questionnaires. In 2006 the question on voice was the first attitudinal question asked, being preceded by a question on nationality. In the other two questionnaires it was preceded by a question which

asked “When you get together with friends would you say you discuss political matters, frequently, occasionally or never”. Thus although the question relating to voice is identical in all three years, it is possible that in the first two political issues were put more strongly in the respondent’s mind. If this is the case, it suggests that people have less success in convincing others of their views over political issues than other ones. Nonetheless as already emphasized the socio economic variations in voice are similar in all three surveys as indeed are the regression results which follow. These socio economic variations are in accordance with a priori expectations, but before we can discuss the implications of this we need to confirm these tendencies with regression analysis.

Insert Figure 1 about here.

## 5. The Empirical Results

Insert Table 2 about here

The dependent variable is discrete and ordered, the technique of ordered probit is therefore appropriate<sup>8</sup>. The results are shown in Table 2. The first column relates to 2004. The results confirm a significant gender gap in social voice between men and women, with women being at a disadvantage. Education increases social voice and also has a further impact in reducing, but not totally, the gender gap. We only have data on age groups rather than age per se and the coefficients show persuasive ability relative to someone aged 15-24. All are positive indicating that the youngest age group feel that they have the greatest social voice. In addition there is a tendency for this to decline as people get older. This is a fairly steady decline until we get to the oldest group when there is a sharp decline in social voice. This could signal that the old ‘are not listened to’, although it may also be because retirement, rather than age, reduces their ‘voice’ or alternatively restricts their social network to more elderly people who hold strong views. To test this we include a dummy variable for those who are retired. It is positive and significant at the 1% level. Location too is significant with, as anticipated, social voice increasing as we move from rural areas to towns and again as we move to larger towns and cities. This is consistent with the view that the pace of change is slower in less densely populated areas and hence views are more firmly held on issues of longer standing. The

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<sup>8</sup> The regressions were done in STATA.

literature suggests that networks and peer groups are formed from geographical neighbours (for example, Gabszewicz and Thisse, 1996; Benabou, 1993). That is the peer group that concerns an agent is formed by geographical neighbors. It might also signal a more homogenous population somewhat immune from heterogeneous views. The results also show that marriage increases people's social voice, but only for men. Indeed the two coefficients related to marriage are such as to suggest, although not significantly so, that marriage slightly reduces women's social voice.

The next column shows the results for 2005. They are essentially similar. Women are still at a disadvantage to men as are the uneducated compared to the educated. Education now also significantly reduces the gender disadvantage but the impact is not sufficient to entirely remove that disadvantage even for the most highly educated. In the data a continuous measure of age is available and hence instead of the several age variables previously used we simply include just age and age squared. The impact of age is nonlinear. Social voice initially increases, but starts to decline at age 29. In reality there is not much impact until people move into their 50s at which point persuasive ability begins to decline sharply. This is shown in Figure 2 and is consistent with Table 1. It is also, given that we have a nonlinear approximation, consistent with the regression results for 2004 with social voice declining more and more with age. The extent of decline between 20 and 70 years is easily enough to shift a substantial number of people from one response category to another, implying reduced social voice, as shown by the coefficients  $\alpha_1$ - $\alpha_3$  in Table 2. The final column shows the results for 2006 and are essentially the same as for the previous years.

Insert Figure 2 about here

Finally there are significant country differences, derived from the country fixed effects, which we briefly summarize<sup>9</sup>. In the 2004 regression, people felt they had the smallest social voice in the transition countries of central and eastern Europe, but not so much those of the Baltic states. The Czech Republic, Slovenia and Hungary, but also Northern Ireland. The country which people felt they had the greatest social voice, other things being equal, was the Netherlands, followed by Malta, Greece and Finland. In the 2005 regression, the Netherlands, Greece, Lithuania and Malta were again the countries where social voice was greatest,

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<sup>9</sup> In regressions we do not report we included GDP per capita as an explanatory variable, rather than country fixed effects. However, there was no consistent pattern to the impact of this variable and, as already said, we do not report the results.

Northern Ireland as well as Slovenia stand out as countries characterised by little persuasive ability. Finally in the 2006 regressions the countries of central and eastern Europe are again prominent in people having a small social voice, other things being equal, and the Netherlands, Malta, Lithuania and Cyprus having the greatest. Table 3 summarizes these results. Year to year variations in the results can be explained by sampling variations and one-off specific events related to the countries. Nonetheless, there is a considerable degree of consistency in these results. Figure 3 shows underlying social voice averaged across the three sets of regressions.

Insert Table 3 about here.

Insert Figure 3 about here.

## 6. The Impact of Social Voice

In this section we will explore the extent to which social voice matters. According to our analysis social voice should impact upon both an individual's ability to deal with adverse situations and their wellbeing. In this section we test these hypotheses. Firstly we will analyze life satisfaction and happiness dependent upon socio-economic characteristics and social voice. Secondly, we regress an individual's attitude to the future dependent upon their socio-economic characteristics, past events and social voice. Clearly as well as social voice, social capital itself will impact upon both these variables. We have no direct measure of social capital as such, but socio-economic characteristics will in part proxy this. All variables are defined in the data appendix.

For happiness and life satisfaction we include socio-economic variables generally included in this analysis.<sup>10</sup> In addition we include a variable relating to past events. The results are shown in Table 4. We focus on the impact of social voice. Lack of voice significantly, in all cases at the 1% level, reduces life satisfaction, happiness with the family, work and the country and optimism about the ability to improve one's position in the future. There has been less done on expectations for the future than on happiness and we briefly note that these become less optimistic with age, and are greatest in large cities, where presumably there are more opportunities on several dimensions than in rural areas and small towns. Interestingly adverse

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<sup>10</sup> See, e.g., Hudson (2006).

past circumstances are expected to continue impacting negatively on the individual's life in the future. In all the regressions the significance of social voice was unchanged when we replaced Gross national income (GNI) per capita and the dummy variable for transitions countries with country fixed effects. In addition, education now becomes positively significant in the attitudes to the future equation at the 5% level of significance.

Insert Table 4 about here.

## **7. Conclusions**

The theoretical analysis, within a Bayesian framework, suggested that an individual's social voice depends upon the confidence others have in the individual's opinions as well as their own opinions. The former will be based on the individual's actual expertise. This is likely to increase with both the individual's age and level of education. But perceived ability may also be subject to bias and our analysis shows that there is a gender gap in social voice with women being at a disadvantage to men, which education goes some way, but only some way, in reducing. This may well be bias, but there is also a considerable literature which suggests that women's mode of discourse is different to men's<sup>11</sup> and this too may lead to differences in social voice. People's ability and hence their social voice should increase with age and in many societies this is the case (Crate, 2002). However group and individual priors probably strengthen with age, or, put another way, people become more entrenched in their views as they get older. To the extent that as people age their social network also ages, i.e. they associate with people who also grow older, this may lead to them having less success in persuading others. This is borne out by both the summary data disaggregated by age and the impact of age in the regression analysis. Additional analysis suggested that social voice matters, that it impacts on both an individual's wellbeing along several dimensions, in the family, in work and more generally. It also impacts on an individual's confidence in their own future, although we need further research to determine whether such confidence is justified.

The fact that women are at a disadvantage to men which is enhanced in marriage, is not only another source of inequality which may have implications in the workplace, at home and in both social and everyday life, but is also a potential source of inefficiency in decision making.

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<sup>11</sup> Education could reduce gender bias as well as impacting on women's mode of discourse, hence the significance of this interactive variable gives no guidance as to the source of gender disadvantage.

Decisions will be reached without, from an informational perspective, an optimal consideration of everyone's views and expertise, and, from an equity perspective in ways which do not maximize the collective welfare of those party to the decision. In particular their relative lack of social voice prevents women from fully exploiting their potential social capital. It is a further factor which helps to explain why there are fewer successful women entrepreneurs (Wagner, 2007), politicians (Lovenduski, 2001) and board members (Singh and Vinnicombe, 2004), etc. But lack of social voice may not always be a matter for concern. In smaller rural areas, e.g., it may simply reflect that these are less subject to change than larger cities and that such areas may be more homogenous in terms of the views people hold. Similarly, declining social voice with age may also simply reflect the aging of an individual's social network, although the rate of decline of social voice suggests a greater problem in which the old 'are not heard'. In addition the homogeneity of some networks may also be regrettable in terms of readiness to adopt new ideas and ways of doing things.

The fact that there are significant and persistent differences<sup>12</sup> between countries, which are independent of the demographic and spatial<sup>13</sup> structure of those countries, raises questions as to why such differences exist. Low social voice may reflect a high degree of stability of a country, as in one in which is undergoing continual change and or facing new ideas people should be more uncertain and thus more open to the opinions of others. However, there is a wide and growing literature on cultural differences between countries (Carroll, Rhee and Rhee, 1994), Fernandez, 2007 and O'Rourke and Sinnot, 2006). Differences in social voice may relate to a hitherto unnoticed national characteristic, openness, or willingness to consider new views, opinions and ideas. This characteristic does not appear correlated with any simple delineation such as provided by GDP per capita, new Europe versus old Europe, or religion. We believe this to be an important avenue for future research. Significant differences within and between countries raises the question of which trait is better. On balance, we would argue that it is to the Netherlands' advantage that, compared to the Czech Republic, social voice is greater and perhaps by extension adaptation to new ideas is also greater.

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<sup>12</sup> At least over the sort space of time our surveys cover.

<sup>13</sup> That is the urban-rural structure.



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## APPENDIX: DATA DEFINITIONS

<b>Persuade:</b>	Responses to a question which asked: “When you hold a strong opinion, do you ever find yourself persuading your friends, relatives or fellow workers to share your views? Possible responses were: (i) often, (ii) from time to time, (iii) rarely and (iv) never. These responses were coded zero to three respectively. A fifth possibility was “don’t know”.
<b>Life Satisfaction</b>	Coded 1 (not at all satisfied) to 4 (very satisfied)
<b>Happy with..</b>	Three variables relating to being happy with the statement: (i) family, (ii) current occupation (work) and living in (their country, coded 1 (totally disagree) to 4 (totally agree).
<b>Personal situation</b>	Two variables: the first compares the situation with 5 years ago (Past situation), the second with five years in the future (Future situation). Responses are worse, about the same and improved coded 1 to 3 respectively.
<b>Male:</b>	Female=0, male=1.
<b>Age:</b>	Age in years.
<b>Education</b>	Age finished full time education Coded: 1, <16 years; 2 16-19 years; 3 >19 years. People still studying are allocated according to their age.
<b>Village(Town)</b>	Takes a 1 if the respondent lives in a rural area or village (small or medium sized town), otherwise 0.
<b>Marital Status</b>	Four variables Takes a value of one if the individual is (i) either married or living with a partner (married), (ii) divorced, (iii) separated and (iv) widow; otherwise zero.
<b>Occupation</b>	Three variables. Takes a value of one if the individual is (i) retired, (ii) unemployed, (iii) a manual worker; otherwise zero.
<b>Difficulty with money</b>	Responses to the question: are you having difficult in making ends meet; coded from 1 (totally agree to 4 (totally disagree)

Table 1: Proportion with limited social voice

<i>Year</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>		<i>2004</i>	<i>2005</i>	<i>2006</i>
Overall	52.21%	52.73%	41.50%	Low-Middle Education	62.64%	62.86%	53.20%
Young	45.69%	46.60%	34.80%	High-Middle Education	51.75%	52.06%	41.40%
Middle Aged	49.83%	50.34%	38.20%	High Education	44.41%	45.33%	33.10%
Old	59.46%	61.36%	51.90%	Village	55.46%	54.38%	43.60%
Female	56.20%	56.94%	44.40%	Town	52.26%	52.35%	41.30%
Male	47.09%	47.46%	37.90%	City	47.67%	50.89%	39.10%
Low Education	75.00%	74.89%	64.90%				

Notes: young was defined as those between 18 and 30, middle aged between 30 and 60 and old, those over 60. Low education denotes those with no qualifications the other categories relate to those who left full time education at 15, between 16 and 19 or aged 20 years or more.

Table 2: Regression (ordered probit) results for social voice

<i>Year</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>
Male	-0.1584* (2.48)	-0.3724** (5.85)	-0.300** (4.70)
Age 25-34	0.1226** (4.52)		
Age 25-44	0.1981** (7.41)		
Age 45-54	0.1569** (5.77)		
Age 55-64	0.2047** (7.47)		
Age 65+	0.3741** (11.25)		
Age		-0.0057* (2.33)	-0.0029 (1.20)
Age <sup>2</sup>		0.0119** (4.63)	0.0104** (4.16)
Village	0.0830** (4.58)	0.0340 (1.81)	0.0617** (3.32)
Town	0.0467** (2.59)	-0.0104 (0.56)	0.0249 (1.36)
Married	-0.1732** (7.53)	-0.0797** (3.39)	-0.135** (5.78)
Married *Female	0.2197** (7.47)	0.1090** (3.59)	0.0870** (2.89)
Retired	0.0785** (3.19)	0.0490* (2.07)	0.0689** (2.94)
Education	-0.1312** (8.45)	-0.1255** (8.36)	-0.133** (8.74)
Education *Female	-0.0295 (1.49)	-0.0688** (3.63)	-0.0605** (3.18)
$\alpha_1$	-1.680	-2.080	-1.805
$\alpha_2$	-0.526	-0.924	-0.588
$\alpha_3$	0.239	-0.115	0.259
Observations	24392	23429	23576
Log Likelihood	31280	29986	29721
Likelihood ratio	2192	2030	2356

Notes: \*denotes significance at the 1% level of significance. (.) denotes t statistic.

N denotes the number of observations. The age variables in both equations are jointly significant at the 1% level in all the regressions. The coefficient on age<sup>2</sup> has been multiplied by a 100 to ease interpretation.  $\alpha_1$ - $\alpha_3$  denote the estimated cut-off points delineating one class of response for the dependent variable from the next.

Table 3: Proportions with limited ability to convince others

	2004	2005	2006
Least	Czech Republic	Spain	Czech
Persuasive			Republic
2 <sup>nd</sup> least	Slovenia	N. Ireland	Slovenia
3 <sup>rd</sup> least	N. Ireland	Slovenia	Finland
4 <sup>th</sup> least	Hungary	Czech	Poland
		Republic	
Most	Netherlands	Netherlands	Netherlands
Persuasive			
2 <sup>nd</sup> most	Malta	Greece	Malta
3 <sup>rd</sup> most	Greece	Lithuania	Lithuania
4 <sup>th</sup> Most	Finland	Malta	Cyprus

Notes: the rankings are based on the coefficients relating to the country fixed effects from the regressions in Table 2.

Table 4: Regression (ordered probit) results for the Impact of social voice

Year	2005	2006			2004
<i>Independent Variable:</i>	<i>Life Satisfaction</i>	<i>Happy Family</i>	<i>Happy Work</i>	<i>Happy in Country</i>	<i>Future Situation</i>
Social Voice	-0.0322** (4.30)	-0.048** (5.54)	-0.050** (5.14)	-0.0321** (3.71)	-0.066** (8.29)
Male	0.0001 (0.03)	-0.016 (0.95)	0.0239 (1.31)	-0.129** (7.78)	-0.0145 (0.93)
Age	-0.0203** (7.73)	-0.0279** (9.47)	-0.0200** (5.69)	-0.0022 (0.74)	-0.343* (12.95)
Age <sup>2</sup>	0.0247** (9.42)	0.0269** (9.21)	0.0243** (6.66)	0.0106** (3.62)	1.818** (4.87)
Village	0.138** (7.40)	0.0769** (3.70)	0.088** (3.81)	0.129** (6.23)	-0.111** (5.65)
Town	0.089** (4.84)	0.0394* (1.95)	0.033 (1.48)	0.0451* (2.26)	-0.0629** (3.23)
Married	0.185** (8.27)	0.641** (26.3)	0.208** (7.95)	0.118** (4.87)	-0.0839** (4.90)
Divorced	-0.141** (3.98)	-0.185** (5.05)	0.0389 (0.94)	-0.100** (2.69)	
Separated	-0.286** (4.86)	-0.251** (4.16)	0.0827 (1.20)	-0.0641 (1.03)	0.211 (3.12)
Widow	-0.123** (3.61)	-0.104** (2.88)	0.0167 (0.36)	-0.0207 (0.56)	
Education	0.238** (22.35)	0.123** (10.20)	0.113** (8.25)	0.0832** (6.88)	0.0203 (1.77)
Unemployed	-0.424** (13.91)	-0.179** (5.40)	-1.169** (28.3)	-0.256** (7.86)	0.143** (4.37)
Manual	-0.111** (5.85)	-0.0147 (0.70)	-0.109** (5.27)	0.0169 (0.81)	-0.083** (4.00)
Retired					-0.071** (2.74)
Past situation	-0.503** (51.16)				0.581** (55.68)
Difficulty with money		0.219** (27.1)	0.228** (25.53)	0.176** (22.03)	
GNI per capita	1.0240** (56.8)	0.554** (17.73)	0.244** (7.17)	0.378** (12.28)	-0.353** (11.2)
Transition	0.0559** (3.29)	0.0211 (0.87)	-0.125** (4.64)	-0.0305 (1.28)	-0.224** (7.48)
Observations	24991	22303	16443	22466	24322
Log Likelihood	-24147	-20025	-17658	-20469	-21000
Likelihood ratio	9093.8	4242.8	2655.8	1858.5	7680.5

Notes: \*denotes significance at the 1% level of significance. (.) denotes t statistic. N denotes the number of observations. The age variables in both equations are jointly significant at the 1% level in all the regressions. The coefficient on age<sup>2</sup> has been multiplied by a 100 to ease interpretation.  $\alpha_1$ - $\alpha_3$  denote the cut-off points delineating one class of response for the dependent variable from the next. The age variable in the 2004 data set is based on age categories and coded 1 to 6.

# Figure 1: Social Voice across the EU

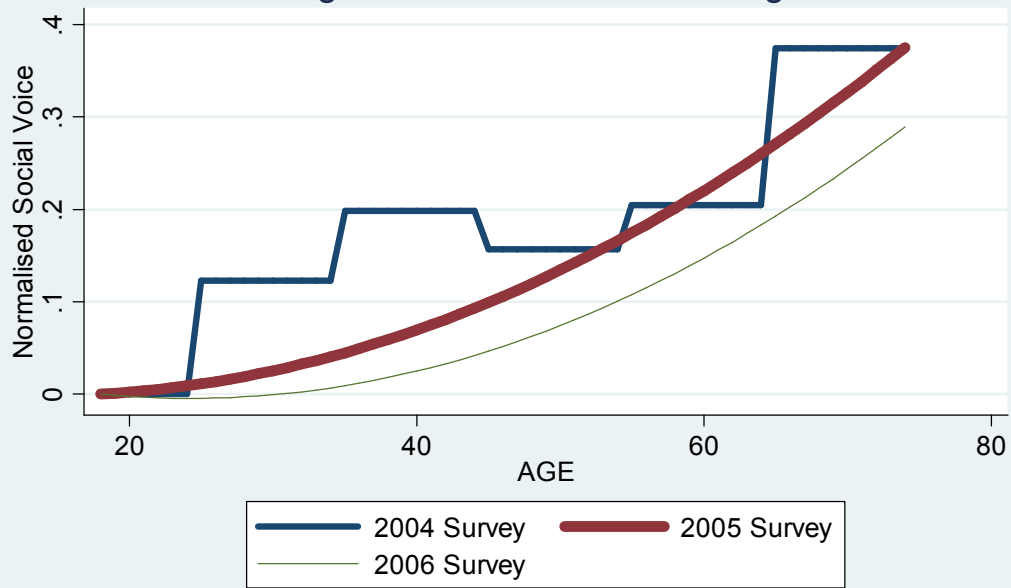
October-November 2005 Survey



Histograms show proportion with an ability to convince then an inability



Figure 2: Social Voice and Age



Curves derived from Regressions in Table 2  
They show social voice declines with age

Figure 3: Underlying Social Voice across the EU



Note: The shading increases with underlying social voice, given the socio economic characteristics of individuals. It is the average of the fixed effects from the three sets of regressions in Table 2.